

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the divisional application:

Listing of Claims:

Claim 1 (currently amended): A power supply with an integral control circuit comprising:
a low voltage section for providing a control signal;
a high voltage section having an output for powering a load; and
a bridge section capacitively coupling the low voltage section to the high voltage section, the bridge section adapted to operate the high voltage section in response to a signal from the low voltage section.

Claim 2 (original): A power supply according to claim 1 wherein the bridge section comprises an integrated circuit.

Claim 3 (original): A power supply according to claim 1 wherein the bridge section comprises an integrated circuit and an external isolation capacitor.

Claim 4 (original): A power supply according to claim 1 wherein the low voltage section further comprises an isolation capacitor.

Claim 5 (original): A power supply according to claim 1 wherein the bridge section further comprises a first half wave rectifier and a second half wave rectifier.

Claim 6 (original): A power supply according to claim 5 wherein the first half wave rectifier has a rise time faster than about 20 volts per microsecond.

Claim 7 (original): A power supply according to claim 5 wherein the second half wave rectifier has a fall time faster than about 50 volts per microsecond.

Claim 8 (original): A power supply according to claim 1 further comprising a first transistor having its base and emitter terminals coupled with the high voltage section for supplying power to the load, and its gate operably coupled to the bridge section.

Claim 9 (currently amended): A power supply with an integral control circuit, comprising:
~~according to claim 8 wherein the bridge section further comprises:~~

a low voltage section for providing a control signal;

a high voltage section having an output for powering a load;

a bridge section capacitively coupling the low voltage section to the high voltage section, the bridge section adapted to operate the high voltage section in response to a signal from the low voltage section;

a first transistor having its base and emitter terminals coupled with the high voltage section for supplying power to the load, and its gate operably coupled to the bridge section;

the bridge section further comprising an isolation capacitor having one terminal coupled to the low voltage section output;

a forward-biased diode and first and second reverse-biased diodes coupled to the opposing terminal of the isolation capacitor;

a resistor and capacitor (RC) pair coupled in parallel with the forward-biased diode and the first reverse-biased diode; and

an NMOSFET having its gate terminal coupled with the RC and first reverse-biased diode, and its source terminal coupled with the RC pair, forward-biased diode and gate of the first transistor, and its drain terminal coupled with the second reverse-biased diode and base of the first transistor.

Claim 10 (original): The power supply of claim 9 adapted for use with a low voltage section output within a frequency range of approximately 1 MHz-10MHz.

Claim 11 (original): The power supply of claim 9 wherein the RC pair exhibits a time constant within a range of approximately three to ten times longer than the minimum frequency used for the low voltage section output.

Claim 12 (original): The power supply of claim 9 wherein the diodes comprise N+ substrate P- well bipolar transistors.